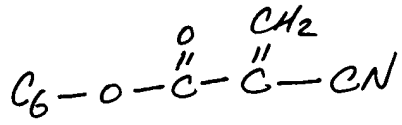
[redacted] hexyl 2-cyanoacrylat[redacted]



```
L3            1 S 3578-06-1
L4           21 S HEXYL AND CYANOACRYLATE

     FILE 'CAPLUS, WPIDS, MEDLINE, EMBASE' ENTERED AT 16:27:11 ON 29 JUN 2002

     FILE 'REGISTRY' ENTERED AT 16:27:58 ON 29 JUN 2002
                SET SMARTSELECT ON
L5           SEL L3 1- CHEM :       6 TERMS
                SET SMARTSELECT OFF

     FILE 'CAPLUS, WPIDS, MEDLINE, EMBASE' ENTERED AT 16:27:59 ON 29 JUN 2002
L6           84 S L5/BI
L7         9304 S L6 OR CYANOACRYLATE# OR CYANACRYLATE#
L8          556 S L7 AND (AVM OR AVMS OR ARTERIOVENOUS MALFORMATION# OR OCCLUS
L9          274 S L7 AND (AVM OR AVMS OR ARTERIOVENOUS MALFORMATION#)
L10           6 S L9 AND PHOSPHORIC ACID
L11           4 DUP REM L10 (2 DUPLICATES REMOVED)
L12           7 S L8 AND PHOSPHORIC ACID
L13           1 S L12 NOT L10
L14          35 S (L8 AND (TANTALUM OR GOLD OR PLATINUM)) NOT (L10 OR L13)
L15          24 DUP REM L14 (11 DUPLICATES REMOVED)

=> d que l8
L3            1 SEA FILE=REGISTRY 3578-06-1
L5              SEL  L3 1- CHEM :       6 TERMS
L6           84 SEA L5/BI
L7         9304 SEA L6 OR CYANOACRYLATE# OR CYANACRYLATE#
L8          556 SEA L7 AND (AVM OR AVMS OR ARTERIOVENOUS MALFORMATION# OR
                OCCLUSION# OR OCCLUD?)
```

=> d 1-6 bib hit

L10 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2002 ACS
AN 2002:123505 CAPLUS
DN 136:172869
TI Polymerizable **cyanoacrylate** compositions for therapeutic uses
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA USA
SO U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 577,115.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2002018752 | A1 | 20020214 | US 2001-863825 | 20010523 |
| PRAI | US 2000-577115 | A2 | 20000523 | | |

TI Polymerizable **cyanoacrylate** compositions for therapeutic uses
AB The present invention provides compns. that polymerizes upon contact with an anionic environment comprising (i) at least two polymerizable org. monomers and (ii) an oligomer of a polymerizable org. monomer, a plasticizer and an opacificant agent. Both polymerizable org. monomers are C1-18 alkyl **cyanoacrylates**. The compns. are useful for filling, occluding, partially filling or partially occluding an unfilled vol. or space in a mass in an anionic environment. The compn. are also useful for ablating diseased or undesired tissue, such as an **arteriovenous malformation** or a tumor, by cutting off the blood supply to the tissue. Also, the compns. are useful for controlled delivery of a therapeutic, chemotherapeutic or radiation delivery device to a desired location in the human body. For example, a formulation with monomer component was prepd. contg. n-hexyl **cyanoacrylate**, hydroquinone, p-methoxyphenol, and glacial acetic acid. The monomer component with a combination of Me **cyanoacrylate** and n-hexyl **cyanoacrylate** can be made. Twelve compounded **cyanoacrylates** were tested for conformal endovascular obliteration utility using a silicone aneurysm model: six based upon the 2-hexyl **cyanoacrylate**/methyl **cyanoacrylate** monomers, six based upon the 1-hexyl **cyanoacrylate**/methyl **cyanoacrylate** monomers. Additives consisted of various oils, gold for opacification, and polymn. retardants. All twelve compds. remained cohesive and conformed nicely to the outline of the aneurysm. Many of the mixts. based upon the 2-hexyl monomer exhibited delayed polymn., and could not be kept within the aneurysm lumen, even with adjacent balloon control of the infusion process. Four of the mixts. based upon the 1-hexyl monomer gave good cohesion, good conformation, remained within the aneurysm, and allowed some degree of angioplasty and remodeling of the arterial lumen by silicone balloon.
ST **cyanoacrylate** monomer oligomer polymn controlled drug delivery; blood vessel occlusion **cyanoacrylate** polymn
IT Polymerization
(anionic; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Blood vessel, disease
(**arteriovenous malformation**; polymerizable **cyanoacrylate** compns. for endovascular occlusion in treatment of **arteriovenous malformation**)
IT Medical goods
(artificial venous valves; polymerizable **cyanoacrylate** compns. for tisuue adhesion to medical surfaces)

IT Drug delivery systems
(controlled-release; polymerizable **cyanoacrylate** compns. for controlled drug delivery)
IT Fatty acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(esters, plasticizers; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Sterility
(female, induction of; polymerizable **cyanoacrylate** compns. for administration to fallopian tubes in female sterilization)
IT Prosthetic materials and Prosthetics
(implants; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Polymerization
(in situ; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Castor oil
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(iodinated; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Uterus, neoplasm
(leiomyoma, inhibitors; polymerizable **cyanoacrylate** compns. for endovascular occlusion in tumor treatment)
IT Myoma
(leiomyoma, uterine, inhibitors; polymerizable **cyanoacrylate** compns. for endovascular occlusion in tumor treatment)
IT Blood vessel
(occlusion; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Particle size
(of opacifiers; polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Magnetic materials
(particles, delivery of; polymerizable **cyanoacrylate** compns. for controlled drug delivery)
IT Drug delivery systems
(particles, magnetic; polymerizable **cyanoacrylate** compns. for controlled drug delivery)
IT Oviduct
(polymerizable **cyanoacrylate** compns. for administration to fallopian tubes in female sterilization)
IT Chemotherapy
Gene therapy
Radiotherapy
(polymerizable **cyanoacrylate** compns. for controlled drug delivery)
IT Antitumor agents
(polymerizable **cyanoacrylate** compns. for endovascular occlusion in tumor treatment)
IT Aneurysm
Human
Opacifiers
Plasticizers
Polymerization inhibitors
(polymerizable **cyanoacrylate** compns. for therapeutic uses)
IT Monomers
Oligomers
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)

(polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT Acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymn. inhibitors; polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT Polymerization
(radical; polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT Medical goods
(stents; polymerizable **cyanoacrylate** compns. for tisuue adhesion to medical surfaces)

IT Antitumor agents
(uterus leiomyoma; polymerizable **cyanoacrylate** compns. for endovascular occlusion in tumor treatment)

IT Heart
(valve, artificial; polymerizable **cyanoacrylate** compns. for tisuue adhesion to medical surfaces)

IT Vein
(valves, artificial; polymerizable **cyanoacrylate** compns. for tisuue adhesion to medical surfaces)

IT 7440-05-3, Palladium, biological studies 7440-06-4, Platinum, biological studies 7440-25-7, Tantalum, biological studies 7440-32-6, Titanium, biological studies 7440-57-5, Gold, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(opacifier; polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT 57-10-3D, Palmitic acid, esters 57-11-4D, Stearic acid, esters 112-80-1D, Oleic acid, esters 124-06-1, Ethyl myristate 143-07-7D, Lauric acid, esters 544-63-8D, Myristic acid, esters
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(plasticizer; polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT 137-05-3, Methyl **cyanoacrylate** 1069-55-2, Isobutyl **cyanoacrylate** **3578-06-1** 6606-65-1 6701-17-3, n-Octyl 2-**cyanoacrylate** 15721-32-1, 2-Ethylhexyl 2-**cyanoacrylate** 15802-18-3D, Cyanoacrylic acid, alkyl esters 398147-86-9
RL: RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT 123-31-9, Hydroquinone, biological studies 150-76-5, p-Methoxyphenol
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymerizable **cyanoacrylate** compns. for therapeutic uses)

IT 64-19-7, Acetic acid, biological studies 7664-38-2, **Phosphoric acid**, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymn. inhibitor; polymerizable **cyanoacrylate** compns. for therapeutic uses)

L10 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2002 ACS
AN 2001:868200 CAPLUS
DN 136:11252
TI Polymerizable compositions as filling materials and methods of their use
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA Provasis Therapeutics, Inc., USA
SO PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DT Patent
LA English

FAN.CNT 2

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2001089501 | A1 | 20011129 | WO 2001-US16638 | 20010523 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-577115 A 20000523

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB The present invention provides compns. comprising a first component and a second component, wherein the first component includes at least two polymerizable org. monomers, and wherein the second component includes an oligomer of a polymerizable org. monomer, a plasticizer and an opacificant agent, wherein said compn. polymerizes upon contact with an anionic environment. The compns. are useful for filling, occluding, partially filling or partially occluding an unfilled vol. or space in a mass in an anionic environment. The compn. are also useful for ablating diseased or undesired tissue by cutting off the blood supply to the tissue. A first component contained 2-hexyl **cyanoacrylate** 1250, hydroquinone 0.0764, p-methoxyphenol 0.0874, and **phosphoric acid** 0.1693 g. A second component was prepd. by mixing 2.0 g of oligo(2-hexyl **cyanoacrylate**) with 100 g of powd. gold, then 1.020 g of this blended material was mixed with 500 mg of Et myristate. Comparison of catheter adhesion force demonstrated that 2-hexyl **cyanoacrylate** compn. had significantly lower adhesion to the catheter than the controls contg. Bu **cyanoacrylate**.

ST polymerizable filling material alkyl **cyanoacrylate**

IT Blood vessel, disease
(**arteriovenous malformation**; polymerizable compns. as filling materials and methods of their use)

IT 15802-18-3DP, Cyanoacrylic acid, alkyl derivs. 25154-80-7P, Poly(butyl **cyanoacrylate**) 26809-38-1P, Poly(iso-butyl **cyanoacrylate**) 26877-34-9P, Poly(octyl **cyanoacrylate**) 26877-39-4P, Poly(2-Hexyl **cyanoacrylate**)
RL: DEV (Device component use); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polymerizable compns. as filling materials and methods of their use)

IT 57-10-3D, Palmitic acid, esters 57-11-4D, Stearic acid, esters 64-19-7, Acetic acid, uses 112-80-1D, Oleic acid, esters 124-06-1, Ethyl myristate 143-07-7D, Lauric acid, esters 544-63-8D, Myristic acid, esters 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-57-5, Gold, uses 7664-38-2, **Phosphoric acid**, uses
RL: NUU (Other use, unclassified); POF (Polymer in formulation); USES (Uses)
(polymerizable compns. as filling materials and methods of their use)

L10 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2002 ACS
AN 2000:534949 CAPLUS
DN 133:140311
TI **Cyanoacrylates** comprising inhibitors and an opacifying agent as

adhesives
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA Prohold Medical Technologies, Inc., USA
SO PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2000044287 | A1 | 20000803 | WO 2000-US2262 | 20000128 |
| W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1154723 | A1 | 20011121 | EP 2000-904626 | 20000128 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| PRAI US 1999-241368 | A2 | 19990129 | | |
| WO 2000-US2262 | W | 20000128 | | |

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI **Cyanoacrylates** comprising inhibitors and an opacifying agent as adhesives

AB A compn. comprising of a monomer component comprised of an alkyl **cyanoacrylate** and at least one inhibitor, and a second component comprised of a resultant aggregate structure formed from an alkyl **cyanoacrylate** monomer, an alkyl esterified fatty acid and an opacificant agent where said compn. forms a resultant aggregate structure when said compn. contacts an anionic environment. The compn. is useful for filling an existing space, e.g., the lumen of a blood vessel, a space created by a transiently placed external device, e.g., a catheter or like device, a space created by a procedure, e.g., an excision or implantation of an object, e.g., a stent. The compn. is also useful for adhering tissue to tissue, or adhering tissue to a device. The compn. has the property of polymg. when it comes in contact with an anionic environment, or when it is deployed in situ in an existing space. Thus, 2-hexyl **cyanoacrylate** (I) was prepd. by the reaction of paraformaldehyde with 2-hexyl cyanoacetate. An adhesive formulation contained I 6.8964, hydroquinone 0.000694, p-methoxyphenol 0.000704, **phosphoric acid** 0.001726 mol. The formulation was an effective embolic agent in the treatment of a patient after acute hemorrhage of a right parieto-occipital **arteriovenous malformation**.

ST **cyanoacrylate** inhibitor opacifier tissue adhesive

IT Embolism
(agents for; **cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)

IT Adhesives
Adhesives
(biol. tissue; **cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)

IT Opacifiers
(**cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)

IT Fatty acids, biological studies
RL: POF (Polymer in formulation); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)
IT Liquids
(oils, halogenated; **cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)
IT Medical goods
Medical goods
(tissue adhesives; **cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)
IT **3578-06-1P**, 2-Hexyl **cyanoacrylate**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); POF (Polymer in formulation); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)
IT 57-10-3D, Palmitic acid, alkyl derivs. 57-11-4D, Stearic acid, alkyl derivs. 123-31-9, 1,4-Benzenediol, biological studies 124-06-1, Ethyl myristate 143-07-7D, Lauric acid, alkyl derivs. 150-76-5, p-Methoxyphenol 7440-06-4, Platinum, biological studies 7440-25-7, Tantalum, biological studies 7440-32-6, Titanium, biological studies 7440-33-7, Tungsten, biological studies 7440-57-5, Gold, biological studies 7664-38-2, **Phosphoric acid**, biological studies 7727-43-7, Barium sulfate 8008-53-5, Ethiodol
RL: POF (Polymer in formulation); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)
IT 372-09-8, Cyanoacetic acid 626-93-7, 2-Hexanol 30525-89-4, Paraformaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(**cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)
IT 286931-66-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**cyanoacrylates** comprising inhibitors and opacifying agent as adhesives)

L10 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2002 ACS
AN 2000:172844 CAPLUS
DN 132:212712
TI Composition comprising 2-hexyl **cyanoacrylate** and gold for creating vascular occlusions
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA Prohold Medical Technologies, Inc., USA
SO U.S., 3 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 6037366 | A | 20000314 | US 1998-151621 | 19980911 |
| PRAI US 1997-58510P | P | 19970911 | | |

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Composition comprising 2-hexyl **cyanoacrylate** and gold for creating vascular occlusions

AB A compn. including 2-hexyl **cyanoacrylate** and gold is useful in treating **arteriovenous malformations** (**AVMs**) and other body lumens to be blocked. A compn. comprised 2-hexyl **cyanoacrylate** 999.550, hydroquinone 100, methoxyphenol 100, **phosphoric acid** 250 ppm in the first part; and pure gold 1.0000, pure Et myristate 0.5000, and FMS (a specially prepd. polymer of 2-hexyl **cyanoacrylate**) 0.0200 g in the second part.

ST vascular occlusion **cyanoacrylate** gold **arteriovenous malformation**

IT Blood vessel, disease
(occlusion; compn. comprising 2-hexyl **cyanoacrylate** and gold for creating vascular occlusions)

IT 7440-57-5, Gold, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compn. comprising 2-hexyl **cyanoacrylate** and gold for creating vascular occlusions)

IT 123-31-9, Hydroquinone, biological studies 124-06-1, Ethyl myristate **3578-06-1**, 2-Hexyl **cyanoacrylate** 7664-38-2, **Phosphoric acid**, biological studies 26638-03-9, Methoxyphenol
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compn. comprising 2-hexyl **cyanoacrylate** and gold for creating vascular occlusions)

L10 ANSWER 5 OF 6 WPIDS (C) 2002 THOMSON DERWENT
AN 2002-240636 [29] WPIDS
DNC C2002-072360
TI Polymerizable composition for filling or occluding unfilled volume or space in human or animal body, contains first component comprising polymerizable organic monomers, and second component containing organic oligomer.
DC A14 A96 B04 D22
IN KERBER, C W; KNOX, K; KRALL, R E
PA (PROV-N) PROVASIS THERAPEUTICS INC
CYC 95
PI WO 2001089501 A1 20011129 (200229)* EN 47p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2001064835 A 20011203 (200229)
ADT WO 2001089501 A1 WO 2001-US16638 20010523; AU 2001064835 A AU 2001-64835 20010523
FDT AU 2001064835 A Based on WO 200189501
PRAI US 2000-577115 20000523
AB WO 200189501 A UPAB: 20020508
NOVELTY - A polymerizable composition consists of first and second components. The first component comprises at least 2 polymerizable organic monomers, and the second component contains an oligomer of polymerizable organic monomer, a plasticizer, and an opacificant agent. The composition polymerizes upon contact with an anionic environment.
USE - The polymerizable composition is used for filling or occluding

an unfilled volume or space e.g. the lumen of blood vessel, the sac of an aneurysm, a space created by transiently placed external device such as catheter, or a space created by a procedure such as excision or implantation of stent. It is also useful for ablating diseased or undesired tissue e.g. **arteriovenous malformation**, and for treating tumor and uterine leiomyoma by blocking or cutting off the blood supply to the tissue or organ. The composition is also used for adhering tissue to tissue, or tissue to a device (claimed). It is also useful as an embolic agent that selectively creates an embolic blockage in blood vessel lumen, duct, fistula, or other body passageways. The composition can be used for aortopulmonary closure; treatment of artery pseudoaneurysm; hepatic artery vascular occlusion and temporary vascular occlusion during co-administration of cytotoxic drugs; and for creating tubal occlusion, fallopian tube occlusion, vas deferens occlusion, and urinary occlusion.

ADVANTAGE - The polymerizable composition is radiopaque, and the heat released during its polymerization does not adversely affect heat-sensitive surrounding tissues e.g. brain tissues. The composition and its biodegradation products are non-histotoxic and non-cytotoxic.

Dwg.0/0

TECH UPTX: 20020508

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: The first component comprises 1-500 (200-300) ppm polymerization inhibitor(s) (preferably acetic or **phosphoric acid**) to inhibit free radical or anionic polymerization. The second component may contain halogenated oil (preferably iodinated castor oil).

Preferred Compounds: The polymerizable organic monomers are 1-18C alkyl **cyanoacrylates**, preferably methyl **cyanoacrylates**, n-butyl **cyanoacrylates**, isobutyl **cyanoacrylates**, n-hexyl **cyanoacrylates**, 2-hexyl **cyanoacrylates**, n-octyl **cyanoacrylates**, or 2-ethylhexyl **cyanoacrylates**. The plasticizer is an esterified fatty acid e.g. laurate, palmitate, oleate, myristate, or stearate, preferably ethyl myristate.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Compound: The opacificant agent is a metal e.g. gold, platinum, palladium, tantalum, and/or titanium, or its alloy, or preferably gold in fine powder form having particle diameter of not more than 7 (preferably not more than 1) microns.

L10 ANSWER 6 OF 6 WPIDS (C) 2002 THOMSON DERWENT
AN 2000-246196 [21] WPIDS
DNC C2000-074484
TI Composition comprising a 2-hexyl **cyanoacrylate** monomer and gold in a polymer of 2-hexylcyanoacrylate, useful for placing in a body lumen to create vascular occlusion.
DC A14 A96 B05
IN KERBER, C W; KNOX, K; KRALL, R E
PA (PROH-N) PROHOLD MEDICAL TECHNOLOGIES INC
CYC 1
PI US 6037366 A 20000314 (200021)* 3p
ADT US 6037366 A Provisional US 1997-58510P 19970911, US 1998-151621 19980911
PRAI US 1997-58510P 19970911; US 1998-151621 19980911
TI Composition comprising a 2-hexyl **cyanoacrylate** monomer and gold in a polymer of 2-hexylcyanoacrylate, useful for placing in a body lumen to create vascular occlusion.
AB US 6037366 A UPAB: 20000502

NOVELTY - A composition for placing in a body lumen to create vascular occlusion comprises a 2-hexyl **cyanoacrylate** monomer and gold in

a polymer of 2-hexylcyanoacrylate.

DETAILED DESCRIPTION - A composition for creating vascular occlusions comprises a mixture of:

(a) 2-hexyl **cyanoacrylate**, hydroquinone, p-methoxyphenol and **phosphoric acid**; and

(b) gold metal powder, ethyl myristate, and a sterilized polymer of 2 hexylcyanoacrylate in weak aqueous bicarbonate solution.

ACTIVITY - Cytostatic; Antiarteriosclerotic; Vasotropic; Cerebroprotective.

MECHANISM OF ACTION - None given.

No biological data is given.

USE - The composition is useful for creating vascular occlusions and for treating **arteriovenous malformations** and tumors (particularly neurological).

ADVANTAGE - The composition is especially useful to treat vascular tumors in the brain and brain stem, both of which are difficult to access and which are susceptible to cytotoxicity and heat.

Dwg.0/0

TECH UPTX: 20000502

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Composition: Component (a) comprises 100 parts per million (ppm) hydroquinone, 100 ppm p-methoxyphenol, 250 ppm **phosphoric acid** and the remainder 2-hexyl **cyanoacrylate**. Component (b) comprises 65 wt.% gold, 30 wt.% ethyl myristate and the remainder sterilized polymer of 2-hexylcyanoacrylate in weak aqueous bicarbonate solution, optionally with sulfur dioxide as a stabilizer.

TT TT: COMPOSITION COMPRISE HEXYL **CYANOACRYLATE** MONOMER GOLD POLYMER USEFUL PLACE BODY LUMEN VASCULAR OCCLUDE.

=> d 1-4 bib ab

L11 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 2002:123505 CAPLUS
DN 136:172869
TI Polymerizable **cyanoacrylate** compositions for therapeutic uses
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA USA
SO U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 577,115.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI US 2002018752 | A1 | 20020214 | US 2001-863825 | 20010523 |
| PRAI US 2000-577115 | A2 | 20000523 | | |

AB The present invention provides compns. that polymerizes upon contact with an anionic environment comprising (i) at least two polymerizable org. monomers and (ii) an oligomer of a polymerizable org. monomer, a plasticizer and an opacificant agent. Both polymerizable org. monomers are C1-18 alkyl **cyanoacrylates**. The compns. are useful for filling, occluding, partially filling or partially occluding an unfilled vol. or space in a mass in an anionic environment. The compn. are also useful for ablating diseased or undesired tissue, such as an **arteriovenous malformation** or a tumor, by cutting off the blood supply to the tissue. Also, the compns. are useful for controlled delivery of a therapeutic, chemotherapeutic or radiation delivery device to a desired location in the human body. For example, a formulation with monomer component was prepd. contg. n-hexyl **cyanoacrylate**, hydroquinone, p-methoxyphenol, and glacial acetic acid. The monomer component with a combination of Me **cyanoacrylate** and n-hexyl **cyanoacrylate** can be made. Twelve compounded **cyanoacrylates** were tested for conformal endovascular obliteration utility using a silicone aneurysm model: six based upon the 2-hexyl **cyanoacrylate**/methyl **cyanoacrylate** monomers, six based upon the 1-hexyl **cyanoacrylate**/methyl **cyanoacrylate** monomers. Additives consisted of various oils, gold for opacification, and polymn. retardants. All twelve compds. remained cohesive and conformed nicely to the outline of the aneurysm. Many of the mixts. based upon the 2-hexyl monomer exhibited delayed polymn., and could not be kept within the aneurysm lumen, even with adjacent balloon control of the infusion process. Four of the mixts. based upon the 1-hexyl monomer gave good cohesion, good conformation, remained within the aneurysm, and allowed some degree of angioplasty and remodeling of the arterial lumen by silicone balloon.

L11 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
AN 2001:868200 CAPLUS
DN 136:11252
TI Polymerizable compositions as filling materials and methods of their use
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA Provasis Therapeutics, Inc., USA
SO PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

[redacted] [redacted]

| | | | | | |
|---|---|---|---|---|---|
| PI | WO 2001089501 | A1 | 20011129 | WO 2001-US16638 | 20010523 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-577115 A 20000523

AB The present invention provides compns. comprising a first component and a second component, wherein the first component includes at least two polymerizable org. monomers, and wherein the second component includes an oligomer of a polymerizable org. monomer, a plasticizer and an opacificant agent, wherein said compn. polymerizes upon contact with an anionic environment. The compns. are useful for filling, occluding, partially filling or partially occluding an unfilled vol. or space in a mass in an anionic environment. The compn. are also useful for ablating diseased or undesired tissue by cutting off the blood supply to the tissue. A first component contained 2-hexyl **cyanoacrylate** 1250, hydroquinone 0.0764, p-methoxyphenol 0.0874, and **phosphoric acid** 0.1693 g. A second component was prepd. by mixing 2.0 g of oligo(2-hexyl **cyanoacrylate**) with 100 g of powd. gold, then 1.020 g of this blended material was mixed with 500 mg of Et myristate. Comparison of catheter adhesion force demonstrated that 2-hexyl **cyanoacrylate** compn. had significantly lower adhesion to the catheter than the controls contg. Bu **cyanoacrylate**.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2

AN 2000:172844 CAPLUS

DN 132:212712

TI Composition comprising 2-hexyl **cyanoacrylate** and gold for creating vascular occlusions

IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly

PA Prohold Medical Technologies, Inc., USA

SO U.S., 3 pp.
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

| | | | | | |
|---|---|---|---|---|---|
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
| PI | US 6037366 | A | 20000314 | US 1998-151621 | 19980911 |
| PRAI | US 1997-58510P | P | 19970911 | | |

AB A compn. including 2-hexyl **cyanoacrylate** and gold is useful in treating **arteriovenous malformations** (**AVMs**) and other body lumens to be blocked. A compn. comprised 2-hexyl **cyanoacrylate** 999.550, hydroquinone 100, methoxyphenol 100, **phosphoric acid** 250 ppm in the first part; and pure gold 1.0000, pure Et myristate 0.5000, and FMS (a specially prepd. polymer of 2-hexyl **cyanoacrylate**) 0.0200 g in the second part.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 2000:534949 CAPLUS
DN 133:140311
TI **Cyanoacrylates** comprising inhibitors and an opacifying agent as adhesives
IN Krall, Robert E.; Kerber, Charles W.; Knox, Kimberly
PA Prohold Medical Technologies, Inc., USA
SO PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2000044287 | A1 | 20000803 | WO 2000-US2262 | 20000128 |
| | W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1154723 | A1 | 20011121 | EP 2000-904626 | 20000128 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| PRAI | US 1999-241368 | A2 | 19990129 | | |
| | WO 2000-US2262 | W | 20000128 | | |

AB A compn. comprising of a monomer component comprised of an alkyl **cyanoacrylate** and at least one inhibitor, and a second component comprised of a resultant aggregate structure formed from an alkyl **cyanoacrylate** monomer, an alkyl esterified fatty acid and an opacificant agent where said compn. forms a resultant aggregate structure when said compn. contacts an anionic environment. The compn. is useful for filling an existing space, e.g., the lumen of a blood vessel, a space created by a transiently placed external device, e.g., a catheter or like device, a space created by a procedure, e.g., an excision or implantation of an object, e.g., a stent. The compn. is also useful for adhering tissue to tissue, or adhering tissue to a device. The compn. has the property of polymg. when it comes in contact with an anionic environment, or when it is deployed in situ in an existing space. Thus, 2-hexyl **cyanoacrylate** (I) was prepd. by the reaction of paraformaldehyde with 2-hexyl cyanoacetate. An adhesive formulation contained I 6.8964, hydroquinone 0.000694, p-methoxyphenol 0.000704, **phosphoric acid** 0.001726 mol. The formulation was an effective embolic agent in the treatment of a patient after acute hemorrhage of a right parieto-occipital **arteriovenous malformation**.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 1 OF 1 WPIDS (C) 2002 THOMSON DERWENT
AN 2000-543304 [49] WPIDS
DNN N2000-401955 DNC C2000-161579
TI Composition which includes an alkyl **cyanoacrylate** monomer is used e.g. for adhering skin tissue.
DC A14 A96 D22 E14 E36 G03 P31 P34
IN KERBER, C W; KNOX, K; KRALL, R E
PA (PROH-N) PROHOLD MEDICAL TECHNOLOGIES INC
CYC 91
PI WO 2000044287 A1 20000803 (200049)* EN 65p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000026354 A 20000818 (200057)
EP 1154723 A1 20011121 (200176) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT WO 2000044287 A1 WO 2000-US2262 20000128; AU 2000026354 A AU 2000-26354 20000128; EP 1154723 A1 EP 2000-904626 20000128, WO 2000-US2262 20000128
FDT AU 2000026354 A Based on WO 200044287; EP 1154723 A1 Based on WO 200044287
PRAI US 1999-241368 19990129
TI Composition which includes an alkyl **cyanoacrylate** monomer is used e.g. for adhering skin tissue.
AB WO 200044287 A UPAB: 20001006
NOVELTY - A composition which forms an aggregate structure when contacted with an anionic environment comprises an alkyl **cyanoacrylate** monomer with at least one inhibitor, as well as a component formed from an alkyl **cyanoacrylate** monomer, an alkyl esterified fatty acid and an opacifying agent.

DETAILED DESCRIPTION - INDEPENDENT CLAIM is included for a method for filling, **occluding**, partially filling or partially **occluding** an unfilled volume or space in a mass in an anionic environment by using the claimed composition.

USE - The composition is useful for filling an existing space, such as the lumen of a blood vessel, a space created by a transiently placed external device, such as a catheter, or a space created by an excision or the implantation of an object, such as a stent. The composition is also useful for adhering tissue to tissue or tissue to a device.

ADVANTAGE - The composition has desirable cohesion, stability, body tolerance, low catheter adhesion and radiopacity properties.

Dwg.0/0
TECH UPTX: 20001006
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Monomer: The alkyl **cyanoacrylate** is 2-hexyl **cyanoacrylate**.
Preferred Inhibitors: The monomer component has at least two inhibitors including hydroquinone (50-150 ppm), p-methoxyphenol (50-150 ppm) and **phosphoric acid** (125-375 ppm).
Preferred Fatty Acid Ester: The alkyl esterified fatty acid is selected from alkyl laurate, alkyl palmitate and stearic acid myristate.
Preferred Opacifying Agent: The opacifying agent is selected from platinum, tantalum, titanium, tungsten, barium sulfate and (preferably) gold. The gold is used in the form of a fine powder with a particle size of no more than 7 microns and preferably no more than 1 microns.
TT TT: COMPOSITION ALKYL **CYANOACRYLATE** MONOMER ADHERE SKIN TISSUE.

=> d 1-24 bib hit

L15 ANSWER 1 OF 24 MEDLINE DUPLICATE 1
AN 2002278616 MEDLINE
DN 22000672 PubMed ID: 12006271
TI N-butyl **cyanoacrylate** embolization of cerebral **arteriovenous malformations**: results of a prospective, randomized, multi-center trial.
AU Anonymous
CS The n-BCA Trail Investigators.
SO AJNR. AMERICAN JOURNAL OF NEURORADIOLOGY, (2002 May) 23 (5) 748-55. Journal code: 8003708. ISSN: 0195-6108.
CY United States
DT (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(MULTICENTER STUDY)
(RANDOMIZED CONTROLLED TRIAL)
LA English
FS Priority Journals
EM 200206
ED Entered STN: 20020522
Last Updated on STN: 20020612
Entered Medline: 20020611
TI N-butyl **cyanoacrylate** embolization of cerebral **arteriovenous malformations**: results of a prospective, randomized, multi-center trial.
AB BACKGROUND AND PURPOSE: Liquid N-butyl **cyanoacrylate** (n-BCA) use for the treatment of **arteriovenous malformations** ( **AVM**) in the brain has become part of medical practice. However, no study has led to the Food and Drug Administration's approval of n-BCA for intravascular use. The purpose of this study was to verify the effectiveness and safety of an n-BCA/**Tantalum** Powder/Ethiodized Oil mixture, compared with conventional treatment (Trufill polyvinyl alcohol [PVA]) for preoperative embolization of cerebral **AVM**. METHODS: Between October 15, 1996, and March 24, 1999, 104 patients at 13 centers were prospectively randomized to undergo embolization using an n-BCA/**Tantalum** Powder/Ethiodol mixture or Trufill PVA. The pre-embolization therapy goals were determined in terms of the number of pedicles to be embolized and the percent of nidus reduction expected. Embolization results were evaluated by a central laboratory. Subsequent surgical resection data were recorded. Safety evaluation data included recording device complications, procedure complications, and intracranial events/overall neurologic outcomes, which could be either device-related, procedure-related, or both. RESULTS: The reduction of **AVM** dimensions (79.4% in the n-BCA group and 86.9% in the PVA group) and the mean number of vessels embolized (2.2 in the n-BCA group and 2.1 in the PVA group) was similar in the two groups. Coils were used more commonly with PVA embolization (P<.0001). No differences were detected in surgical resection time, number of patients who required transfusion, volume and number of transfusion units, or type and volume of fluid replacement. Glasgow Outcome Scale scores were not significantly different between the two groups before treatment, after embolization, or after resection. Two of 42 patients who underwent resection and had been treated with n-BCA experienced post-resection hematoma, compared with eight of 45 patients who underwent resection and had been treated with PVA (P<.05). CONCLUSION: This prospective, randomized trial showed that n-BCA is equivalent to PVA as a preoperative embolic agent for treatment of cerebral **AVM** as determined by percent of nidus reduction and number of feeding pedicles embolized.

CT Check Tags: Comparative Study; Female; Human; Male
Adult
*Embolization, Therapeutic
Enbucrilate: AE, adverse effects
*Enbucrilate: TU, therapeutic use
Hematoma: CI, chemically induced
Hematoma: ET, etiology
***Intracranial Arteriovenous Malformations: TH, therapy**
Polyvinyl Alcohol: AE, adverse effects
*Polyvinyl Alcohol: TU, therapeutic use
Postoperative Complications
Preoperative Care
Prospective Studies
Safety
Single-Blind Method
Treatment Outcome

L15 ANSWER 2 OF 24 MEDLINE DUPLICATE 2
AN 2002114282 IN-PROCESS
DN 21834597 PubMed ID: 11846039
TI Combined therapy of cerebral **arteriovenous malformations** : histological differences between a non-adhesive liquid embolic agent and n-butyl 2-**cyanoacrylate** (NBCA).
AU Duffner F; Ritz R; Bornemann A; Freudenstein D; Wiendl H; Siekmann R
CS Department of Neurosurgery, University Hospital, Eberhard-Karls University, Tubingen, Germany.. frank.duffner@med.uni-tuebingen.de
SO CLINICAL NEUROPATHOLOGY, (2002 Jan-Feb) 21 (1) 13-7.
Journal code: 8214420. ISSN: 0722-5091.
CY Germany: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20020216
Last Updated on STN: 20020216
TI Combined therapy of cerebral **arteriovenous malformations** : histological differences between a non-adhesive liquid embolic agent and n-butyl 2-**cyanoacrylate** (NBCA).
AB OBJECTIVE: Based on 2 casuistics, the intraoperative qualities of a new, non-adhesive liquid embolic agent (Onyx, Micro Therapeutics. Inc., Irvine, CA, USA) are to be compared to those of n-butyl 2-**cyanoacrylate** (NBCA) with regard to the histopathological results after preoperative embolization of a cerebral **arteriovenous malformation** (**AVM**). PATIENTS AND METHODS: In a case example, the intraoperative quality of the nidus after embolization of a parieto-occipital **AVM** with Onyx--a new, non-adhesive liquid embolic agent--consisting of ethylene-vinyl alcohol copolymer (EVOH), dimethyl sulfoxide (DMSO) and **tantalum**, is described. In the second patient, embolization of a frontal high-flow **AVM** was performed with NBCA. Both patients underwent surgery with complete resection ofthe **AVM**. RESULTS: From a neurosurgical point of view, Onyx is suitable for preoperative embolization of **AVMs**, because the nidus intraoperatively remains elastic and formable and can be dissected from the surrounding brain tissue quite well by microsurgical technique. Inflammatory reactions can be found mainly in the lumina of the vessels. CONCLUSIONS: Onyx promises to be an embolic agent well suitable for subsequent neurosurgical resection. Further studies considering various intervals of time between embolization and resection as well as histopathological and electron microscopical examinations are necessary for evaluation of our first experience with this new embolization agent.

L15 ANSWER 3 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 2001290389 EMBASE
TI Successful transarterial glue embolisation by wedged technique for a tentorial dural arteriovenous fistula presenting with a conjunctival injection.
AU Iizuka Y.; Maehara T.; Hishii M.; Miyajima M.; Arai H.
CS Y. Iizuka, Department of Radiology, Juntendo University, School of Medicine, 2-1-1 Hongo, Bunkyo-ku, Tokyo 113-8421, Japan
SO Neuroradiology, (2001) 43/8 (677-679).
Refs: 15
ISSN: 0028-3940 CODEN: NRDYAB
CY Germany
DT Journal; Article
FS 008 Neurology and Neurosurgery
014 Radiology
037 Drug Literature Index
LA English
SL English
AB Many tentorial dural arteriovenous fistulae (TDAVF) present with intracranial haemorrhage. We report a patient who presented with conjunctival injection. Transarterial embolisation of the TDAVF was undertaken with a wedged injection of a low concentration of N-butyl **cyanoacrylate**, arresting the flow next to the proximal segment of the venous outlet. After three sessions, a complete cure was achieved. We present a useful method which has not been reported previously.
CT Medical Descriptors:
*artificial embolism
***brain arteriovenous malformation: DI, diagnosis**
***brain arteriovenous malformation: DT, drug therapy**
***brain arteriovenous malformation: TH, therapy**
conjunctiva disease
technique
cerebellum
dura mater
brain hemorrhage
treatment outcome
human
male
case report
adult
article
priority journal
Drug Descriptors:
*enbucrilate: CB, drug combination
*enbucrilate: DT, drug therapy
tissue adhesive: DT, drug therapy
iodinated poppyseed oil: CB, drug combination
iodinated poppyseed oil: DT, drug therapy
**tantalum: CB, drug combination**
**tantalum: DT, drug therapy**
RN (enbucrilate) 25154-80-7, 6606-65-1; (iodinated poppyseed oil) 8001-40-9, 8002-46-8, 8006-56-2, 8006-57-3; (**tantalum**) 7440-25-7

L15 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 3
AN 2000:824137 CAPLUS
DN 134:9343
TI Methods for treating **arteriovenous malformations** using radioactive compositions

IN Wallace, George
PA Micro Therapeutics, Inc., USA; Greff, Richard J.
SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2000069474 | A1 | 20001123 | WO 2000-US13245 | 20000512 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| | US 6333020 | B1 | 20011225 | US 1999-311803 | 19990513 |
| | EP 1191947 | A1 | 20020403 | EP 2000-932420 | 20000512 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| PRAI | US 1999-311803 | A1 | 19990513 | | |
| | WO 2000-US13245 | W | 20000512 | | |

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Methods for treating **arteriovenous malformations** using radioactive compositions

AB Disclosed are methods for treating **arteriovenous malformations** in a mammal by use of a radioactive compn. The methods involve in vivo delivery of radioactive substances in a fluid to one or more vascular sites in the **arteriovenous malformation**. Subsequent solidification of the compn. results in vascular embolization to partially ablate the **arteriovenous malformation** and delivery of a controlled amt. of radiation to further ablate the **arteriovenous malformation** and inhibits its regrowth. In one example, a compn., using a "cold" isotope, is prepd. based on ethylene-vinyl alc. copolymer, micronized **tantalum**, iridium powder, and DMSO. Such compns., when added to saline, provide a solid, coherent ppt. The delivery of such compns. was demonstrated in pigs. A non-radioactive contrast agent may be added to the compns. to enable visualization of the delivery.

ST polymeric radioactive compn **arteriovenous malformation** ablation

IT Blood vessel, disease
(**arteriovenous malformation**; radioactive compns. for treating **arteriovenous malformations**)

IT Solvents
(biocompatible; radioactive compns. for treating **arteriovenous malformations**)

IT Polymers, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(biocompatible; radioactive compns. for treating **arteriovenous malformations**)

IT Imaging agents

(contrast; radioactive compns. for treating **arteriovenous malformations**)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(glycolide-based; radioactive compns. for treating **arteriovenous malformations**)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(lactide; radioactive compns. for treating **arteriovenous malformations**)

IT Polyethers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ortho ester group-contg.; radioactive compns. for treating **arteriovenous malformations**)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyamide-; radioactive compns. for treating **arteriovenous malformations**)

IT Polyethers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polycarbonate-; radioactive compns. for treating **arteriovenous malformations**)

IT Polyamides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyester-; radioactive compns. for treating **arteriovenous malformations**)

IT Polycarbonates, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyether-; radioactive compns. for treating **arteriovenous malformations**)

IT Drug delivery systems
Drug targeting
Hydrogels
Radiopharmaceuticals
Radiotherapy
(radioactive compns. for treating **arteriovenous malformations**)

IT Radionuclides, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(radioactive compns. for treating **arteriovenous malformations**)

IT Collagens, biological studies
Fibrins
Gelatins, biological studies
Polyamides, biological studies
Polyanhydrides
Polycarbonates, biological studies
Polyesters, biological studies
Polyketones
Polyoxyalkylenes, biological studies
Polyoxymethylenes, biological studies
Polyphosphazenes
Polyurethanes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(radioactive compns. for treating **arteriovenous malformations**)

IT 440-58-4, Iodamide 1225-20-3, Iothalamate sodium 1314-61-0, **Tantalum** oxide 6284-40-8, Meglumine 7440-06-4,

**Platinum**, biological studies 7440-25-7, **Tantalum**, biological studies 7440-33-7, Tungsten, biological studies 7440-57-5, **Gold**, biological studies 7727-43-7, Barium sulfate 31112-62-6, Metrizamide 60166-93-0, Iopamidol
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(contrast agent; radioactive compns. for treating **arteriovenous malformations**)

IT 25154-80-7, Poly(butyl **cyanoacrylate**)
RL: BPR (Biological process); BSU (Biological study, unclassified); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(radioactive compns. for treating **arteriovenous malformations**)

IT 6606-65-1
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(radioactive compns. for treating **arteriovenous malformations**)

IT 67-68-5, Dmso, biological studies 7439-88-5, Iridium, biological studies 25067-34-9, Ethylene-vinyl alcohol copolymer
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(radioactive compns. for treating **arteriovenous malformations**)

IT 1398-61-4, Chitin 9003-20-7, Polyvinyl acetate 9003-39-8, Polyvinylpyrrolidone 9004-34-6, Hydroxycellulose, biological studies 9004-35-7, Cellulose acetate 9004-36-8, Cellulose acetate butyrate 9004-70-0, Nitrocellulose 9012-76-4, Chitosan 10043-49-9, **Gold** 198, biological studies 10045-97-3, Cesium 137, biological studies 10098-91-6, Yttrium 90, biological studies 10098-97-2, Strontium 90, biological studies 10198-40-0, Cobalt 60, biological studies 13981-50-5, Cobalt 57, biological studies 13981-99-2, Nickel 57, biological studies 13982-25-7, Cobalt 55, biological studies 14093-03-9, Cobalt 56, biological studies 14093-04-0, Iron 52, biological studies 14119-09-6, Gallium 67, biological studies 14158-31-7, Iodine 125, biological studies 14391-22-1, Thulium 167, biological studies 14596-37-3, Phosphorus 32, biological studies 14681-59-5, Iron 55, biological studies 14687-25-3, Lead 203, biological studies 14694-69-0, Iridium 192, biological studies 14809-46-2, Selenium 72, biological studies 14833-23-9, Zinc 62, biological studies 14967-68-1, Palladium 103, biological studies 15047-05-9, Cesium 129, biological studies 15064-65-0, Thallium 201, biological studies 15128-03-7, Copper 61, biological studies 15422-57-8, Selenium 73, biological studies 15715-08-9, Iodine 123, biological studies 15741-33-0, Manganese 57, biological studies 15750-15-9, Indium 111, biological studies 15755-33-6, Arsenic 72, biological studies 15765-39-6, Bromine 77, biological studies 15776-19-9, Bismuth 206, biological studies 18268-34-3, Rubidium 81, biological studies 24980-41-4, Polycaprolactone 25014-41-9, Polyacrylonitrile 25248-42-4, Polycaprolactone 25300-64-5, Styrene-maleic acid copolymer 25322-68-3, Polyethylene glycol 26009-03-0, Polyglycolide 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26063-00-3, Polyhydroxybutyrate 26202-08-4, Polyglycolide 26680-10-4, Polylactide 26744-04-7 31621-87-1, Polydioxanone 78644-42-5, Poly(malic acid) 102190-94-3, Polyhydroxyvaleric acid

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (radioactive compns. for treating **arteriovenous malformations**)

IT 64-17-5, Ethanol, biological studies 67-64-1, Acetone, biological studies 97-64-3, Ethyl lactate
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (solvent; radioactive compns. for treating **arteriovenous malformations**)

L15 ANSWER 5 OF 24 WPIDS (C) 2002 THOMSON DERWENT
AN 2001-070908 [08] WPIDS
DNN N2001-053688 DNC C2001-019754
TI Intracorporeal space filling device for treating e.g. patient's blood vessels, includes material which is transmutable from non-rigid state to rigid state.
DC A14 A17 A28 A96 D22 P32
IN MARKS, M P; ROSS, M
PA (SETH-N) SETHEL INTERVENTIONAL INC
CYC 93
PI WO 2000072781 A2 20001207 (200108)* EN 40p
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
AU 2000051799 A 20001218 (200118)
EP 1200012 A2 20020502 (200236) EN
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT WO 2000072781 A2 WO 2000-US15445 20000602; AU 2000051799 A AU 2000-51799 20000602; EP 1200012 A2 EP 2000-936492 20000602, WO 2000-US15445 20000602
FDT AU 2000051799 A Based on WO 200072781; EP 1200012 A2 Based on WO 200072781
PRAI US 1999-324987 19990602
AB WO 200072781 A UPAB: 20010207
NOVELTY - An intracorporeal space filling device comprises a transmutable material disposed within an inner lumen (15) of an elongate tubular shell. The inner lumen is fluidly connected with first and second ports which are disposed at first and second ends of the shell, respectively. The material is transmutable from a non-rigid to a rigid state within the patient's body.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(a) a method of **occluding** an intracorporeal void comprising positioning the distal end of a microcatheter so that a distal port in the distal end will be directed to the cavity of the intracorporeal void, advancing an intracorporeal space filling device (10), and transmuting the transmutable material (16); and

(b) a detachment mechanism for detaching an intracorporeal space filling device from a delivery system comprising a degradable polymer link securing the intracorporeal space filling device to the delivery system, and a heating element disposed in thermal contact with the degradable polymer link.

USE - The device is used to treat a patient's blood vessels, intracorporeal conduits or other portions of the patient's body. It can also be used to treat intracranial aneurysms, arteriovenous fistulas, and other abnormalities within the cerebral vasculature.

ADVANTAGE - The transmutable material provides a space filling device to be soft and flexible at the time of deployment into an intracorporeal cavity and is incompressible after converted to a rigid state. The device

conforms to the morphology of intracorporeal cavities and transmutes to rigid mass upon activation or hardening of the transmutable material. The device is resistant to compression and reforming due to vascular or other types of pressures within the patient's body.

DESCRIPTION OF DRAWING(S) - The figure is a longitudinal sectional view of an intracorporeal space filling device.

Intracorporeal space filling device 10

Shell 11

Lumen 15

Transmutable material 16

Dwg.1/26

TECH UPTX: 20010207

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: The outer wall of the shell (11) is a polymer material of polyurethane, polyethylene, nylon, polyimide, polyamide, polytetrafluoroethylene, polyester or polypropylene. The transmutable material is methacrylate compounds, linear polyester, silicone, **cyanoacrylates**, polyisocyanate, ultra violet curable acrylates, moisture cure silicones, dimethyl sulfoxide, thioisocyanate aldehyde, isocyanate, divinyl compounds, epoxide acrylates, succinimidyl azido salicylate, succinimidyl azidobenzoate, succinimidyl dithio acetate, azidoiodobenzene, fluoronitrophenylazide, salicylate azides or benzophenonemaleimide.

TECHNOLOGY FOCUS - METALLURGY - Preferred Material: The shell may be a metal of stainless steel, nickel titanium alloy, **gold**, **platinum**, **tantalum** or palladium.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Components: The shell has an outside surface, which is self adhering in a fluid field to create attachment from contact points upon activation. The shell has apertures to expose portions of the transmutable material upon transmutation. An elongated longitudinal mechanism is secured to the device coextensive with the shell. A helical coil is disposed to, and coextensive with the shell. A delivery system, the first end of the shell, and bead(s) containing transmutable material are detachably secured to the detachment mechanism. Each bead is connected to adjacent bead by a flexible mechanism and configured to produce a linear array of the beads. The flexible mechanism is a portion of an elongated mechanism disposed along axis of the device.

Preferred Method: A blocking balloon, which is adjacent to the intracorporeal void and the distal end of the microcatheter, is deployed before advancing the device into the void. The polymer link is degraded by a chain cleavage reaction. The heating element is configured to be heated by an electric current.

L15 ANSWER 6 OF 24 WPIDS (C) 2002 THOMSON DERWENT

AN 2000-602071 [57] WPIDS

CR 2000-223969 [18]; 2000-572323 [53]; 2002-214894 [26]

DNN N2000-445484 DNC C2000-180201

TI Magnetic embolic agent for treatment of vascular defects, particularly an aneurysm or atriovenous malformation, comprises a polymer, solvent, adhesive and magnetic particles.

DC A18 A25 A96 B04 D22 G03 P34 S05

IN GARIBALDI, J M; HASTINGS, R N; HOGG, B J; REN, B

PA (STER-N) STEREOTAXIS INC

CYC 91

PI WO 2000054832 A1 20000921 (200057)* EN 56p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES

FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

AU 2000038983 A 20001004 (200101)

US 6296604 B1 20011002 (200160)

EP 1169081 A1 20020109 (200205) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

ADT WO 2000054832 A1 WO 2000-US7222 20000316; AU 2000038983 A AU 2000-38983 20000316; US 6296604 B1 CIP of US 1999-271118 19990317, US 1999-430200 19991029; EP 1169081 A1 EP 2000-918116 20000316, WO 2000-US7222 20000316

FDT AU 2000038983 A Based on WO 200054832; EP 1169081 A1 Based on WO 200054832

PRAI US 1999-430200 19991029; US 1999-271118 19990317

AB WO 200054832 A UPAB: 20020429

NOVELTY - A magnetic embolic agent (MEA) for magnetic placement in a vascular defect (VD) to form an embolus in it to **occlude** it, is new.

DETAILED DESCRIPTION - A novel MEA for magnetic placement in a VD to form an embolus in it to **occlude** the defect, comprises:

(a) 5 - 50 wt. % biocompatible polymer (BP);

(b) 40 - 90 wt. % biocompatible solvent (BS) capable of solubilizing the BP;

(c) 1 - 20 wt. % adhesive (AA); and

(d) 5 - 50 wt. % magnetic particles (MP) responsive to a magnetic field.

INDEPENDENT CLAIMS are also included for the following:

(1) treating a VD comprising magnetically positioning a MEA at the site of the VD to form an embolus at the site of the VD; the MEA being chemically reactive to lose some of its magnetic responsiveness after formation of the embolus;

(2) treating a VD comprising:

(a) providing a real time digital image of the operating site;

(b) applying a magnetic field at the operating site with an external magnet;

(c) ejecting a magnetic embolic material from a catheter under the influence of the applied magnetic field to form an embolus that **occludes** the defect; and

(d) stopping the ejection of embolic material when the image indicates that the defect is **occluded**;

(3) a biocompatible magnetic mixture (BMM) which can be ejected through a standard microcatheter (MC) and held magnetically within a VD, comprising:

(a) 5-50 wt.% MP;

(b) 5-50wt.% BP;

(c) 40-90wt.% solvent which dissolves the BP; the MP and BP being homogeneously distributed throughout the BS which precipitates from the solution as the BMM is deposited into the VD and held by an externally applied magnetic field;

(4) a BMM which can be delivered through a MC and held magnetically within a VD composed of:

(a) 5-50wt.% MP;

(b) 5-50wt.% BP;

(c) 1-20wt.% AA;

(d) 40-90wt.% BS which dissolves the BP; the AA improving the cohesiveness and tissue attachment characteristics of the BMM while the MP, AA and BP are homogeneously distributed throughout the BS and precipitates from the solution as the BMM is deposited into the VD and held by an externally applied magnetic field;

(5) a BMM which can be delivered through a MC and held magnetically

within a VD composed of:

(a) 5-50wt.% MP; and

(b) 5-50wt.% AA; the MP isomogeneously distributed within the BMM and the BMM deposited into the VD and held by an externally applied magnetic field;

(6) a BMM can be delivered through a MC and held magnetically within a VD composed of:

(a) 5-50wt.% MP;

(b) 1-50wt.% dispersion agent;

(c) 10-95wt.% AA; where the dispersion agent improves the homogeneity of the MP within the BMM and the BMM can be deposited into the VD and held by an externally applied magnetic field;

(7) a BMM which can be delivered through a MC and held magnetically within a VD composed of:

(a) 5-90wt.% coated MP;

(b) 10-90wt.% BS; whereby the MP is coated with an agent which is dissolved in the BS to form a homogeneous BMM which can be deposited into the VD and held by an externally applied magnetic field;

(8) a MEA for magnetic placement in a VD with increased X-ray opacification to form an embolus in the defect to occlude the defect, the agent comprising:

(a) 4-70wt.% BP;

(b) 10-80wt.% BS capable of solubilizing the BP;

(c) 10-50wt.% MP responsive to a magnetic field; and

(d) 10-50wt.% X-ray opaque MP responsive to a magnetic field;

(9) a MEA for magnetic placement in a VD using diluted solvents to form an embolus in the defect to occlude the defect, the agent comprising:

(a) 4-70wt.% biocompatible reactive polymer;

(b) 10-80wt.% BS diluted in water capable of solubilizing the BP;

(c) 0-50wt.% BP; and

(d) 10-50wt.% MP responsive to a magnetic field;

(10) a MEA for magnetic placement in a VD using diluted solvents with increased X-ray opacification to form an embolus in the defect to occlude the defect, the agent comprising:

(a) 4-70wt.% BP;

(b) 10-80wt.% BS diluted in water capable of solubilizing the BP;

(c) 0-50wt.% adhesive;

(d) 10-50wt.% MP responsive to a magnetic field; and

(e) 10-50wt.% X-ray opaque MP responsive to a magnetic field;

(11) an embolic agent for delivery into a VD to form an embolus in the defect to occlude the defect, the agent comprising:

(a) 4-80wt.% BP;

(b) 30-95wt.% BS capable of solubilizing the BP;

(c) 1-70wt.% adhesive; and

(d) an X-ray opaque material is added to enhance the visibility under fluoroscopy;

(12) an embolic agent for delivery into a VD to form an embolus in the defect to occlude the defect, the agent comprising:

(a) 4-80wt.% biocompatible reactive polymer;

(b) 10-90wt.% BS diluted in water capable of solubilizing the BP;

(c) 0-80wt.% BP; and

(d) an X-ray opaque material to enhance visibility under fluoroscopy;

(13) a MEA for magnetic placement in a VD to form an embolus in it to occlude the defect, the agent comprising:

(a) 10-90wt.% biocompatible reactive polymer;

(b) 10-80wt.% MP responsive to a magnetic field; and

(c) 10-80wt.% X-ray opaque MP responsive to a magnetic field;

(14) a 2-part MEA for magnetic placement in a VD to form an embolus in it to occlude the defect, the agent comprising:

(a) a first part comprising:
(i) 10-90wt.% biocompatible reactive polymer;
(ii) 10-80wt.% MP responsive to a magnetic field; and
(iii) 10-80wt.% X-ray opaque MP responsive to a magnetic field; and
(b) a second part comprising 10-90wt.% BP catalyst;
(15) treating a VD comprising:
(a) introducing a flowable first magnetic composition into the VD under the guidance of an externally applied magnetic field;
(b) introducing a flowable second magnetic composition into the VD under the guidance of an externally applied magnetic field, the second magnetic composition when mixed with the first magnetic composition forming a non-flowable material; and
(c) mixing the first and second magnetic compositions in the VD by varying the externally applied magnetic field to form an occlusion in the VD;
(16) retarding the hardening of an embolic material injected into a VD comprising injecting a biocompatible liquid with a high surface tension prior to injecting the embolic material to create a clean barrier between bodily fluid and embolic material;
(17) a magnetic liquid embolic agent responsive to an externally applied magnetic field to flow into a VD and harden to occlude the VD, the embolic agent comprising a BP, a BS, 25-40wt.% magnetite, and 15-25wt.% gold plated nickel.
ACTIVITY - Vasotropic. No biological data is given.
MECHANISM OF ACTION - None given.
USE - The new compositions and methods can be used for treating vascular defects such as aneurysms and atriovenous malformations.
ADVANTAGE - The new compositions can be delivered intravascularly through a catheter and can be guided into and held in place in the vascular defect with an applied magnetic field. Defects of all shapes and at all locations can be treated equally by simply adjusting the magnetic force direction.
Dwg.21/23

TECH UPTX: 20001109
TECHNOLOGY FOCUS - POLYMERS - Preferred Agent: The BP includes polyurethane, hydrogel, ethylene vinyl alcohol (EVOH), polynethylmethacrylate, cellulose acetate, polyvinyl alcohol, prolamines, ethyl cellulose, polyvinyl acetate, polyvinyl butyrate, polyvinyl alcohol, hydrogels, polyvinyl pyrrolidone, or mussel adhesive protein. The coating for the BMM includes at least one of cellulose acetate, polymerized methylmethacrylate, polyethylene vinyl alcohol, or polyvinyl acetate. In the magnetic embolic agents, the biocompatible polymer may comprise prolamine, and the diluting solvent may comprise ethanol.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Agent: The BS is preferably dimethylsulphoxide (DMSO), acetone, ethyl acetate or ethanol. The AA is preferably **cyanoacrylate**, methylmethacrylate or fibrin. The ratio of the BP to the biocompatible adhesive may be 40:1 to 1:1. The dispersion agent for the BMM may be at least one of a stearate, seed oils or esters.

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Agent: The MP may be 1-10 micrometers and are preferably iron, coated iron, carbonyl-iron, or iron carbon composite particles.

L15 ANSWER 7 OF 24 MEDLINE DUPLICATE 4
AN 2000248775 MEDLINE
DN 20248775 PubMed ID: 10789913
TI Pulmonary emboli following therapeutic embolization of cerebral

**arteriovenous malformations** in children.
AU Kjellin I B; Boechat M I; Vinuela F; Westra S J; Duckwiler G R
CS Department of Radiological Sciences, UCLA School of Medicine, Center of the Health Sciences, Los Angeles, CA 90095-1721, USA.
SO PEDIATRIC RADIOLOGY, (2000 Apr) 30 (4) 279-83.
Journal code: 0365332. ISSN: 0301-0449.
CY GERMANY: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200006
ED Entered STN: 20000622
Last Updated on STN: 20000622
Entered Medline: 20000609
TI Pulmonary emboli following therapeutic embolization of cerebral **arteriovenous malformations** in children.
AB BACKGROUND: Reports of the complicating side effect of pulmonary embolism (PE) following endovascular therapy of cerebral **arteriovenous malformations** (**AVM**) in children have been limited in number. Details of its occurrence are yet to be fully elucidated. OBJECTIVE: The hypothesis is that inadvertent pulmonary migration of embolic material is common and may go unrecognized. MATERIALS AND METHODS: Forty-seven patients (ages 1 day to 16 years and 11 months) underwent embolization of a cerebral **AVM** with at least one material ( **cyanoacrylate**, **platinum** coils, detachable balloons, polyvinyl alcohol particles). The medical records and chest radiographs were reviewed retrospectively. Chest radiographs were available in 34 patients. The radiographs were analyzed for the presence or absence of foreign material in the lungs. RESULTS: The chest radiographs in 12 patients (35%) showed pulmonary deposits of embolic material; **cyanoacrylate** in 10 patients and **platinum** coils in 2. Two of the patients with **cyanoacrylate** deposits in the lungs developed respiratory distress that required endotracheal intubation. The patients gradually improved after a time period of 7-10 days with conservative treatment. CONCLUSION: PE is not an uncommon complication in children undergoing embolization of brain **AVM**. Although usually asymptomatic, PE may cause severe symptoms.
CT Check Tags: Comparative Study; Female; Human; Male
Adolescence
Child
Child, Preschool
Electrocardiography
*Embolization, Therapeutic: AE, adverse effects
Embolization, Therapeutic: MT, methods
Enbucrilate
Infant
Infant, Newborn
***Intracranial Arteriovenous Malformations: TH, therapy**
**Platinum**
Polyvinyl Alcohol
Pulmonary Embolism: DI, diagnosis
*Pulmonary Embolism: ET, etiology
Pulmonary Embolism: RA, radiography
Radiography, Thoracic
Tomography, X-Ray Computed
RN 6606-65-1 (Enbucrilate); **7440-06-4 (Platinum)**; 9002-89-5 (Polyvinyl Alcohol)

L15 ANSWER 8 OF 24 MEDLINE DUPLICATE 5

AN 1999063588 MEDLINE
DN 99063588 PubMed ID: 9848842
TI Embolization of neurosurgical lesions involving the ophthalmic artery.
AU Lefkowitz M; Giannotta S L; Hieshima G; Higashida R; Halbach V; Dowd C; Teitelbaum G P
CS Department of Neurological Surgery, University of Southern California School of Medicine, Los Angeles, USA.
SO NEUROSURGERY, (1998 Dec) 43 (6) 1298-303.
Journal code: 7802914. ISSN: 0148-396X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199903
ED Entered STN: 19990326
Last Updated on STN: 19990326
Entered Medline: 19990312
AB OBJECTIVE: A number of anteriorly located cranial base and extracranial lesions receive their vascular supply wholly or in part from the ophthalmic artery, and embolization of the ophthalmic artery can be helpful in the management of these lesions, either as the primary treatment or as an adjunct to surgery. We present situations in which the embolization of lesions involving the ophthalmic artery was performed to effect a partial or total cure of the lesion. METHODS: Twelve patients underwent a total of 15 embolization attempts on lesions involving the ophthalmic artery. Four patients had **arteriovenous malformations** of the orbit, four had dural arteriovenous fistulae, two had orbital meningiomas, one had a planum sphenoidale meningioma, and one had a juvenile nasal angiofibroma. In each case, a Tracker No. 18 microcatheter (Target Therapeutics, Inc., Fremont, CA) was navigated into the ophthalmic artery using a steerable guidewire and digital road mapping. Embolic agents included polyvinyl alcohol particles ranging from 350 to 1500 microm in diameter, 2-mm **platinum** microcoils, and n-butyl-**cyanoacrylate**. In 12 of 15 cases, lidocaine and amytal provocation tests were conducted before any attempt at embolization to assess the role of the ophthalmic artery in vision. RESULTS: Embolization was successfully performed in the 14 situations in which it was attempted. Positive results of two lidocaine/amytal tests were noted. In one case, embolization was not attempted. In the other case, a larger caliber embolic agent (2-mm **platinum** coils) was used. A single transient decrease in visual acuity lasting 4 days was the only embolization-related complication. CONCLUSION: Proper case selection, judicious use of embolic agents, and use of provocative testing can result in safe embolization of lesions supplied by the ophthalmic artery.
CT Check Tags: Case Report; Female; Human; Male
Adolescence
Adult
Aged
Amobarbital: DU, diagnostic use
Angiofibroma: BS, blood supply
Angiofibroma: SU, surgery
*Angiofibroma: TH, therapy
Arteriovenous Fistula: SU, surgery
Arteriovenous Fistula: TH, therapy
**Arteriovenous Malformations: SU, surgery**
***Arteriovenous Malformations: TH, therapy**
Combined Modality Therapy
*Dura Mater: BS, blood supply
*Embolization, Therapeutic

Embolization, Therapeutic: AE, adverse effects
Embolization, Therapeutic: IS, instrumentation
Embolization, Therapeutic: MT, methods
Enbucrilate: TU, therapeutic use
Infant
Lidocaine: DU, diagnostic use
Meningeal Neoplasms: BS, blood supply
Meningeal Neoplasms: SU, surgery
*Meningeal Neoplasms: TH, therapy
Meningioma: BS, blood supply
Meningioma: SU, surgery
*Meningioma: TH, therapy
Middle Age
Nose Neoplasms: BS, blood supply
Nose Neoplasms: SU, surgery
*Nose Neoplasms: TH, therapy
*Ophthalmic Artery
Ophthalmic Artery: AH, anatomy & histology
Orbital Neoplasms: BS, blood supply
Orbital Neoplasms: SU, surgery
*Orbital Neoplasms: TH, therapy
Particle Size
Polyvinyl Alcohol: TU, therapeutic use
Prostheses and Implants
Retinal Artery: AH, anatomy & histology
Treatment Outcome
Vision Disorders: ET, etiology
Vision Disorders: PC, prevention & control

L15 ANSWER 9 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 1998374545 EMBASE
TI [Anaesthesiological management of patients with arteriovenous malformafions (**AVMs**) undergoing neuroradiological intervention]. ANASTHESIOLOGISCHES MANAGEMENT BEI PATIENTEN MIT ARTERIOVENOSEN MALFORMATIONEN (**AVM**) IN DER INTERVENTIONELLEN NEURORADIOLOGIE.
AU Jaeger K.; Ruschulte H.; Heine J.; Leuwer M.; Piepenbrock S.
CS Dr. K. Jaeger, Zentrum Anasthesiologie, Medizinische Hochschule Hannover, Carl-Neuberg-Strasse 1, D-30625 Hannover, Germany
SO Anasthesiologie und Intensivmedizin, (1998) 39/10 (501-504).
Refs: 21
ISSN: 0170-5334 CODEN: ANIMD2
CY Germany
DT Journal; Article
FS 008 Neurology and Neurosurgery
024 Anesthesiology
LA German
SL English; German
TI [Anaesthesiological management of patients with arteriovenous malformafions (**AVMs**) undergoing neuroradiological intervention]. ANASTHESIOLOGISCHES MANAGEMENT BEI PATIENTEN MIT ARTERIOVENOSEN MALFORMATIONEN (**AVM**) IN DER INTERVENTIONELLEN NEURORADIOLOGIE.
AB Intracranial **arteriovenous malformations** (**AVM**) present with neurological symptoms like headache, focal and general convulsions or disordered vigilance mainly caused by bleeding or infarction. The treatment of **AVMs** consists of neurosurgery, radiosurgery or interventional neuroradiology: Vessels feeding or draining an **AVM** convolute are an **occluded** selectively by N-butyl **cyanoacrylate** or **platinum** coils, probably neccessitating several interventional sessions. Neuroradiological

treatment of **arteriovenous malformations** has been remarkably improved over recent years. Endovascular embolisation can be performed under sedation or general anaesthesia. With respect to the delicate anatomic and pathophysiological condition of **AVMs**, appropriate periinterventional anaesthesiological monitoring and treatment have to be chosen. Intracranial haemodynamics and brain metabolism may not be irritated by drugs and anaesthesia management: For early neurological assessment patients should be wide awake once neuroradiological procedures are finished. Central nervous functions should be monitored postoperatively in an intermediate care or intensive care unit. Basically, principles of neurosurgical anaesthesia can be transferred to anaesthesia management of patients undergoing neuroradiological procedures.

CT Medical Descriptors:
***arteriovenous malformation**
*neuroradiology
*anesthesiology
neurologic disease: DI, diagnosis
preoperative care
artificial embolism
postoperative complication
neurologic examination
intensive care
patient care
sedation
general anesthesia
human
article

L15 ANSWER 10 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 1999029567 EMBASE
TI Influence of temperature on embolisation with **cyanoacrylate**.
AU Bracard S.; Macho-Fernandez J.M.; Wang X.; Anxionnat R.; Picard L.
CS Prof. L. Picard, University Hospital, 1, Rue Foiler C.O. n. 34, 54035 Nancy Cedex, France. s.bracard@chu-nancy.fr
SO Interventional Neuroradiology, (1998) 4/4 (301-305).
Refs: 15
ISSN: 1123-9344 CODEN: INEUFS
CY Italy
DT Journal; Article
FS 008 Neurology and Neurosurgery
014 Radiology
LA English
SL English
TI Influence of temperature on embolisation with **cyanoacrylate**.
AB We evaluated the influence of temperature on the viscosity of mixtures with different histoacryl/lipiodol concentrations and on injection control, to test the radiological visualization of these mixtures. A viscosimeter was used to measure the viscosity of different histoacryl and lipiodol combinations at various temperatures. After introduction of these blends into the polyethylene tubes, their radiological densities were evaluated by means of CT and DSA. Viscosity was found to be directly proportional to the percentage of lipiodol and inversely proportional to the temperature. By digital subtraction, the mixtures were still visible when the percentage of histoacryl reached 90%. Warming histoacryl and lipiodol mixtures to a temperature that is close to 40.degree.C decreases the mixture's viscosity significantly and makes the injection easier to manage. **Tantalum** and tungsten powders do not necessarily have to be added to visualize mixtures containing less than 90% histoacryl.
CT Medical Descriptors:

*artificial embolism
*brain artery aneurysm: SU, surgery
***brain arteriovenous malformation: SU, surgery**
viscosity
computer assisted tomography
viscometry
digital subtraction angiography
temperature sensitivity
article
Drug Descriptors:
***cyanoacrylate**
RN (**cyanoacrylate**) 15802-18-3

L15 ANSWER 11 OF 24 MEDLINE DUPLICATE 6
AN 97022702 MEDLINE
DN 97022702 PubMed ID: 8869062
TI Endovascular treatment of experimental aneurysms with liquid polymers: the protective potential of stents.
AU Szikora I; Guterman L R; Standard S C; Wakhloo A K; Hopkins L N
CS Department of Neurosurgery, State University of New York at Buffalo, USA.
SO NEUROSURGERY, (1996 Feb) 38 (2) 339-47.
Journal code: 7802914. ISSN: 0148-396X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199701
ED Entered STN: 19970128
Last Updated on STN: 19970128
Entered Medline: 19970114
AB Liquid polymers have previously been used to treat experimental and human aneurysms. However, the delivery of a liquid embolic material into the cerebral circulation involves a high risk of irreversible vessel **occlusion** and stroke. To evaluate methods for the safe and effective treatment of experimental aneurysms with liquid polymer injection, we tested four different techniques to deliver cellulose acetate polymer (CAP) or N-hexyl-**cyanoacrylate** into canine side-wall carotid artery aneurysms. The animals were observed for 1 to 10 weeks after treatment. Two aneurysms were treated without protection of the distal circulation, one with CAP and another with N-hexyl-**cyanoacrylate**. In four cases, an angioplasty balloon was inflated within the parent artery during endosaccular injection of CAP. In two of these cases, the balloon was placed adjacent to the aneurysm orifice, resulting in simultaneous **occlusion** of both the aneurysm and the parent artery, and in the other two cases, the balloon was positioned proximal to the aneurysm, resulting in temporary flow arrest. Three aneurysms were treated with either CAP or N-hexyl-**cyanoacrylate** after implantation of a balloon-expandable **tantalum** stent within the parent artery across the aneurysm orifice. Complete angiographic obliteration was achieved in all but one case. One aneurysm ruptured. Another partially **occluded** aneurysm reopened 10 weeks after treatment. In all cases treated without stents, distal migration of the polymer resulted in either stenosis or **occlusion** of the parent arteries. The combination of stent implantation and polymer injection resulted in permanent aneurysm **occlusion** without detectable polymer migration. An intravascular stent deployed within the parent artery across the aneurysm orifice acted as a safety net during endosaccular polymer injection by allowing blood to flow from the aneurysm cavity while preventing distal migration of liquid polymer.

CT Check Tags: Animal; Support, Non-U.S. Gov't
Aneurysm: PA, pathology
Aneurysm: RA, radiography
*Aneurysm: TH, therapy
Angiography, Digital Subtraction
Balloon Dilatation
Carotid Artery Diseases: PA, pathology
Carotid Artery Diseases: RA, radiography
*Carotid Artery Diseases: TH, therapy
Cellulose: AD, administration & dosage
*Cellulose: AA, analogs & derivatives
Cellulose: TU, therapeutic use
*Cyanoacrylates: AD, administration & dosage
Cyanoacrylates: TU, therapeutic use
Dogs
Injections
Polymers: AD, administration & dosage
Polymers: TU, therapeutic use
*Stents
RN **26877-39-4 (poly(hexyl-2-cyanoacrylate))**; 9004-34-6 (Cellulose); 9004-35-7 (acetylcellulose)
CN 0 (**Cyanoacrylates**); 0 (Polymers)

L15 ANSWER 12 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 95027311 EMBASE
DN 1995027311
TI Symptomatic pulmonary complications from liquid acrylate embolization of brain **arteriovenous malformations**.
AU Pelz D.M.; Lownie S.P.; Fox A.J.; Hutton L.C.
CS Radiology Department, University Hospital, Box 5339, 339 Windermere Rd,London, Ont. N6A 5A5, Canada
SO American Journal of Neuroradiology, (1995) 16/1 (19-26).
ISSN: 0195-6108 CODEN: AAJNDL
CY United States
DT Journal; Article
FS 008 Neurology and Neurosurgery
014 Radiology
015 Chest Diseases, Thoracic Surgery and Tuberculosis
037 Drug Literature Index
038 Adverse Reactions Titles
LA English
SL English
TI Symptomatic pulmonary complications from liquid acrylate embolization of brain **arteriovenous malformations**.
AB PURPOSE: To describe symptomatic pulmonary emboli from brain **arteriovenous malformation** embolization with liquid acrylates and to analyze the reasons for these complications and describe preventive techniques. METHODS: The clinical records of 182 patients embolized with acrylate glue since 1978 for treatment of brain **AVMs** were searched for evidence of symptomatic pulmonary complications. Originally isobutyl-2-**cyanoacrylate** and more recently n- butyl-2-**cyanoacrylate** were used in all patients. **Arteriovenous malformation** morphology, amounts and techniques of glue injection, and clinical and radiologic investigations in the symptomatic patients were recorded. RESULTS: Three patients had pulmonary symptoms within 48 hours of glue injection. One patient with a left frontal **arteriovenous malformation** had embolization with an isobutyl-2-**cyanoacrylate**/pantopaque/acetic acid mixture; severe pleuritic chest pain developed 2 days later. One

patient with a left temporal and one with a left cerebellar **arteriovenous malformation** had embolization with n-butyl-2-**cyanoacrylate**/lipiodol mixtures; a cough, pleuritic chest pain, and bloody sputum developed in both within 24 hours. Two patients experienced a significant drop in PO2. No flow-arrest techniques were used for any of the injections in these three patients. All patients demonstrated significant changes on chest x-ray and CT chest examinations. All were treated conservatively and recovered spontaneously. CONCLUSIONS: Symptomatic pulmonary complications can occur after acrylate glue injection, particularly when delivery systems without flow arrest are used in high-flow vascular brain lesions. Techniques using acetic acid to delay polymerization time and 'sandwich' techniques in which glue is pushed with dextrose are also more susceptible to this complication.

CT Medical Descriptors:
*artificial embolism
***brain arteriovenous malformation: TH, therapy**
***brain arteriovenous malformation: DI, diagnosis**
*lung embolism: SI, side effect
adult
article
case report
clinical feature
computer assisted tomography
female
human
male
oxygen tension
thorax pain
thorax radiography
Drug Descriptors:
*acetic acid: CB, drug combination
*bucrilate: AE, adverse drug reaction
*bucrilate: CB, drug combination
***cyanoacrylate derivative: AE, adverse drug reaction**
*enbucrilate: AE, adverse drug reaction
*enbucrilate: CB, drug combination
*iodinated poppyseed oil: CB, drug combination
*iofendylate: CB, drug combination
glue
**tantalum**

RN (acetic acid) 127-08-2, 127-09-3, 64-19-7, 71-50-1; (bucrilate) 1069-55-2; (enbucrilate) 25154-80-7, 6606-65-1; (iodinated poppyseed oil) 8001-40-9, 8002-46-8, 8006-56-2, 8006-57-3; (iofendylate) 99-79-6; (**tantalum**) 7440-25-7

L15 ANSWER 13 OF 24 MEDLINE DUPLICATE 7
AN 92325777 MEDLINE
DN 92325777 PubMed ID: 1625008
TI **Arteriovenous malformations** of the brain: choosing embolic materials to enhance safety and ease of excision.
CM Comment in: J Neurosurg. 1993 Jul;79(1):153-5
AU Purdy P D; Batjer H H; Risser R C; Samson D
CS Department of Radiology, University of Texas Southwestern Medical School, Dallas.
SO JOURNAL OF NEUROSURGERY, (1992 Aug) 77 (2) 217-22.
Journal code: 0253357. ISSN: 0022-3085.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Abridged Index Medicus Journals; Priority Journals
EM 199208
ED Entered STN: 19920821
Last Updated on STN: 20000303
Entered Medline: 19920813
TI **Arteriovenous malformations** of the brain: choosing embolic materials to enhance safety and ease of excision.
AB The authors report their experience with surgical resection of 108 previously embolized **arteriovenous malformations** (**AVM**'s). Embolization was performed via only transfemoral catheterization in 70 lesions and via the surgical exposure of feeding vessels in 32. The remaining six patients were referred for resection following silicone sphere embolization elsewhere. Materials used included polyvinyl alcohol (PVA) foam, **platinum** microcoils, detachable silicone balloons, surgical silk, a mixture of 33% ethanol and microfibrillar collagen, and isobutyl **cyanoacrylate** (IBCA). It is believed that proximal arterial **occlusion** with balloons is an inferior choice for preresection embolization, because the technical difficulty of placement is high and the nidus of the **AVM** is unaffected. Vascular coagulation and section and **AVM** retraction are more difficult with IBCA; therefore, this is also considered an inferior choice. Among the materials studied, the combination of PVA for distal **occlusion** and microcoils for proximal **occlusion** appears to be the superior choice. Fewer complications (stroke or hemorrhage) are seen when intraarterial Amytal (amobarbital) testing is used to guide the embolization. Data regarding toxicity, oncogenicity, and vascular metabolism or recanalization associated with PVA, IBCA, and n-butyl **cyanoacrylate** are reviewed.
CT Check Tags: Human
Balloon Dilatation
Bucrylate: PK, pharmacokinetics
*Bucrylate: TU, therapeutic use
*Embolization, Therapeutic
**Intracranial Arteriovenous Malformations: SU, surgery**
***Intracranial Arteriovenous Malformations: TH, therapy**
Polyvinyl Alcohol: PK, pharmacokinetics
*Polyvinyl Alcohol: TU, therapeutic use

L15 ANSWER 14 OF 24 MEDLINE DUPLICATE 8
AN 85138293 MEDLINE
DN 85138293 PubMed ID: 3974809
TI Experimental carotid aneurysms: Part 2. Endovascular treatment with **cyanoacrylate**.
AU Kerber C W; Cromwell L D; Zanetti P H
SO NEUROSURGERY, (1985 Jan) 16 (1) 13-7.
Journal code: 7802914. ISSN: 0148-396X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198503
ED Entered STN: 19900320
Last Updated on STN: 20000303
Entered Medline: 19850326
TI Experimental carotid aneurysms: Part 2. Endovascular treatment with **cyanoacrylate**.
AB Using our modification of the vein patch technique, we created 16 aneurysms in the common carotid arteries of dogs. After a stabilizing and healing period, these aneurysms were treated using percutaneous catheter

techniques. Coaxial microcatheters were placed into the aneurysms, and a mixture of isobutyl 2-**cyanoacrylate** and **tantalum** dust was infused through the microcatheter using real time fluoroscopic control. Fifteen of the 16 aneurysms were successfully **occluded**; 1 was a failure because of total **occlusion** of the carotid artery. One human facial artery aneurysm was similarly treated. The ease and technical details of the treatment are discussed. Although the results are encouraging, we believe that it would be prudent to broaden the animal experimentation rather than to begin human use. Because no experimental aneurysm models are yet physiological, our results must be applied with caution to human intracranial aneurysms.

CT Check Tags: Animal; Case Report; Female; Human; Male
Adolescence
*Bucrylate
Carotid Artery Diseases: ET, etiology
*Carotid Artery Diseases: TH, therapy
Carotid Artery, External
***Cyanoacrylates**
Dogs
*Embolization, Therapeutic: MT, methods
Intracranial Aneurysm: ET, etiology
*Intracranial Aneurysm: TH, therapy
**Tantalum**

RN 1069-55-2 (Bucrylate); **7440-25-7 (Tantalum)**

CN 0 (**Cyanoacrylates**)

L15 ANSWER 15 OF 24 MEDLINE DUPLICATE 9

AN 82245789 MEDLINE

DN 82245789 PubMed ID: 7099369

TI The clinical application of intracranial artery canulation technique (author's transl).

AU Negoro M; Berenstein A

SO NO SHINKEI GEKA. NEUROLOGICAL SURGERY, (1982 Mar) 10 (3) 271-7. Journal code: 0377015. ISSN: 0301-2603.

CY Japan

DT Journal; Article; (JOURNAL ARTICLE)

LA Japanese

FS Priority Journals

EM 198209

ED Entered STN: 19900317
Last Updated on STN: 20000303
Entered Medline: 19820910

AB The introduction of the microscope into the neurosurgical operating theater brought the significant change on its operative results. However, even by means of the meticulous microsurgical techniques, certain intracranial lesion like deep-seated **AVM** cannot yet be successfully treated. Instead of the extravascular approach, intravascular treatment of these lesions has been evolved and become the great aid for the therapeutic purpose. In 1974 Serbinenko published his excellent work about his detachable balloon catheter technique. He succeeded in treating the intracranial lesions by the intravascular approach with the more exact manner than before. The balloon could make it possible to guide the small catheter into the distal branch of intracranial arteries. And also the balloon was detached and use as embolus. Until now, various balloon catheters become clinically available. Among them the catheter which Kerber devised is made of soft silicone and equipped with microballoon at the distal end. Although the balloon itself cannot be detached, it has a small hole at its top and can deliver the fluid through this opening (calibrated leak). The method for this catheter usage is as follows. Using

Seldinger technique, the non-tapered thin wall catheter has to be placed on the proximal side of the attempted artery as the introducing catheter. Through it, balloon catheter is cannulated coaxically and navigated more distally with the inflation or deflation of the balloon. Clinical application of this catheter include the superselective angiography, drug infusion and selective embolization. For the embolization, fluid embolus must be chosen. At this time **cyanoacrylate**, a potent tissue adhesive, is used as the embolus and injected with the mixture of Pantopaque and **tantalum** powder. Two cases of deep seated cerebral **AVM** were treated by selective embolization. **AVM** was completely **occluded** in one case, in the other case the embolization was interrupted because of worsening of neurologic defecits. In conclusion, the calibrated leak balloon catheter (Kerber) has wide range of clinically applicable potential and will become the great aid for the intravascular treatment.

CT Check Tags: Case Report; Human; Male
Adult
*Catheterization: MT, methods
Cerebral Angiography
*Cerebral Arteries: SU, surgery
*Embolization, Therapeutic: MT, methods
English Abstract
***Intracranial Arteriovenous Malformations: TH, therapy**
Middle Age

L15 ANSWER 16 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 82063297 EMBASE
DN 1982063297
TI [Superselective embolization in the genitourinary tract].
SUPERSELEKTIVER ARTERIELLER GEFASSVERSCHLUSS IM UROGENITALTRAKT.
AU Guenther R.
CS Inst. Klin. Strahlen., Johannes Gutenberg-Univ., 6500 Mainz 1, Germany
SO Aktuelle Urologie, (1982) 13/1 (1-4).
CODEN: AKURAJ
CY Germany
DT Journal
FS 028 Urology and Nephrology
018 Cardiovascular Diseases and Cardiovascular Surgery
014 Radiology
016 Cancer
037 Drug Literature Index
LA German
SL English
AB Superselective embolization of the kidney with pinpointed **occlusion** of small branches of the renal artery for treatment of a.-v. fistulae, bleeding due to angiomas or following biopsy is the method of choice with curative effect. In inoperable tumors of solitary kidneys as well as tumors of the bladder, prostate or uterus it is only a palliative measure generally with the aim of hemostasis. The tissue adhesive Butyl-2-**cyanoacrylate** mixed with lipiodol and **tantalum** powder has proved particularly suitable for superselective **occlusion** of small vessels.
CT Medical Descriptors:
*arteriovenous fistula
*artificial embolism
*hemangioma
*kidney artery
*kidney cancer
peripheral vascular system

[redacted] [redacted]

therapy
kidney
Drug Descriptors:
***cyanoacrylate derivative**
*gelfoam
*enbucrilate
*polyvinyl alcohol sponge
*prolamin
*silicone
iodinated poppyseed oil
**tantalum**
ethibloc
RN (enbucrilate) 25154-80-7, 6606-65-1; (polyvinyl alcohol sponge) 63148-64-1; (prolamin) 117987-77-6; (silicone) 63148-53-8, 8043-93-4, 8055-24-1; (iodinated poppyseed oil) 8001-40-9, 8002-46-8, 8006-56-2, 8006-57-3; (**tantalum**) 7440-25-7; (ethibloc) 91196-33-7

L15 ANSWER 17 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 82036447 EMBASE
DN 1982036447
TI Pathology of **arteriovenous malformations** embolized with isobutyl-2-**cyanoacrylate** (bucrylate). Report of two cases.
AU Vinters H.V.; Debrun G.; Kaufmann J.C.E.; Drake C.G.
CS Dept. Clin. Neurol. Sci., Univ. Hosp., London, Ont. N6A 5AS, Canada
SO Journal of Neurosurgery, (1981) 55/5 (819-825).
CODEN: JONSAC
CY United States
DT Journal
FS 038 Adverse Reactions Titles
037 Drug Literature Index
008 Neurology and Neurosurgery
014 Radiology
005 General Pathology and Pathological Anatomy
018 Cardiovascular Diseases and Cardiovascular Surgery
LA English
TI Pathology of **arteriovenous malformations** embolized with isobutyl-2-**cyanoacrylate** (bucrylate). Report of two cases.
AB There is controversy as to the possible toxic effects of isobutyl-2-**cyanoacrylate** (bucrylate) when this substance is used for purposes of therapeutic embolization. Two cases are presented in which cerebral **arteriovenous malformations** were resected, one 42 days and the other a year after bucrylate embolization. In both, pathological examination revealed a brisk intimal foreign-body giant-cell reaction wherever bucrylate was present in a vessel, along with chronic inflammation in the vessel walls and adjacent brain parenchyma. The findings are discussed in the light of other observations on the histotoxicity of bucrylate.
CT Medical Descriptors:
*adverse drug reaction
*artificial embolism
***brain arteriovenous malformation**
*embolism
*giant cell granuloma
*therapy
histology
central nervous system
peripheral vascular system
case report
autopsy

Drug Descriptors:
*bucrilate
*polyvinyl alcohol
***tantalum**
polyvinyl alcohol sponge
RN (bucrilate) 1069-55-2; (polyvinyl alcohol) 37380-95-3, 9002-89-5; (**tantalum**) 7440-25-7; (polyvinyl alcohol sponge) 63148-64-1

L15 ANSWER 18 OF 24 MEDLINE DUPLICATE 10
AN 81200154 MEDLINE
DN 81200154 PubMed ID: 6165036
TI Treatment of intracerebral **arteriovenous malformations** with isobutyl 2-**cyanoacrylate**: initial clinical experience.
AU Bank W O; Kerber C W; Cromwell L D
SO RADIOLOGY, (1981 Jun) 139 (3) 609-16.
Journal code: 0401260. ISSN: 0033-8419.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 198107
ED Entered STN: 19900316
Last Updated on STN: 19970203
Entered Medline: 19810723
TI Treatment of intracerebral **arteriovenous malformations** with isobutyl 2-**cyanoacrylate**: initial clinical experience.
AB From November 1976 to September 1979, 46 patients with intracranial **arteriovenous malformations** or fistulas participated in a clinical study using isobutyl 2-**cyanoacrylate** (IBCA), with **tantalum**, for palliative or preoperative **occlusion** of the blood supply to the abnormalities. Although failure to obtain satisfactory position of a functioning microcatheter precluded deposition of IBCA 10 times, a total of 51 of a possible 62 feeding vessels were **occluded** with the **tantalum**-impregnated glue. The technique, results, and complications are discussed in light of the clinical follow-up, which varied from 12 to 48 months.
CT Check Tags: Female; Human; Male
Adolescence
Adult
Aged
**Arteriovenous Malformations: RA, radiography**
***Arteriovenous Malformations: TH, therapy**
*Bucrylate: AD, administration & dosage
Child
***Cyanoacrylates: AD, administration & dosage**
*Embolization, Therapeutic: MT, methods
Follow-Up Studies
Middle Age
Palliative Care
Postoperative Complications
**Tantalum**
Tomography, X-Ray Computed
RN 1069-55-2 (Bucrylate); **7440-25-7 (Tantalum)**
CN 0 (**Cyanoacrylates**)

L15 ANSWER 19 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 81070275 EMBASE
DN 1981070275
TI [Transrenal ureteric embolisation. Experimental and clinical results].

TRANSRENALE URETEREMBOLISATION. EXPERIMENTELLE UND KLINISCHE ERGEBNISSE.
AU Guenther R.; Klose K.; Bohl J.; Marberger M.
CS Inst. Klin. Strahlenk., Univ. Mainz, Germany
SO Fortschritte auf den Gebiete der Rontgenstrahlen und der Nuklearmedizin, (1980) 133/5 (471-476).
CODEN: FGRNAJ
CY Germany
DT Journal
FS 014 Radiology
028 Urology and Nephrology
037 Drug Literature Index
LA German
SL English
AB Transrenal ureteric embolisation with the tissue adhesive butyl 2-cyano-acrylate mixed with lipiodol and **tantalum** powder produces rapid and effective **occlusion** of the ureter. This can be combined with the use of a Gianturco spiral. In an experimental series of eight dogs observed for 54 days, the adhesive disappeared partly in three animals and totally in a further three. Fibrotic ureteric stenosis was observed in three animals. Clinical results were rather better because of the the presence of external urinary drainage. Twenty-one ureters in eighteen patients were **occluded** either unilaterally or bilaterally, and sometimes combined with percutaneous contralateral renal embolisation. After one to four months, the ureter was still **occluded** in three out of six cases; after five to 17 months, three out of five cases were no longer totally **occluded**, but in two cases they were still blocked. The procedure is new and suitable for the treatment of otherwise untreatable conditions, such as extensive urinary fistulae, bladder tenesmus, and haematuria due to extensive tumours of the minor pelvis.
CT Medical Descriptors:
*artificial embolism
*ureter
bladder carcinoma
uterine cervix carcinoma
urinary tract
bladder
animal experiment
major clinical study
therapy
dog
kidney
Drug Descriptors:
***cyanoacrylate derivative**
*iodinated poppyseed oil
***tantalum**
RN (iodinated poppyseed oil) 8001-40-9, 8002-46-8, 8006-56-2, 8006-57-3; (**tantalum**) 7440-25-7

L15 ANSWER 20 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 79176753 EMBASE
DN 1979176753
TI Modification of **cyanoacrylate** for therapeutic embolization: Preliminary experience.
AU Cromwell L.D.; Kerber C.W.
CS Dept. Radiol., Univ. Washington Sch. Med., Seattle, Wash. 98195, United States
SO American Journal of Roentgenology, (1979) 132/5 (799-801).
CODEN: AJROAM

CY United States
DT Journal
FS 037 Drug Literature Index
014 Radiology
018 Cardiovascular Diseases and Cardiovascular Surgery
LA English
TI Modification of **cyanoacrylate** for therapeutic embolization: Preliminary experience.
AB **Cyanoacrylate** is a satisfactory material for therapeutic embolization, but it has the disadvantages of not being radiopaque and polymerizing within 1 sec after contact with ionic materials. Its behavior was modified with varying concentrations of iophendylate and we were able to satisfactorily control its polymerization from 1 to 30 sec. This control should allow penetration of **arteriovenous malformations**, which is necessary if cure is to result. The iophendylate adds radiopacity and seems to enhance the suspension of **tantalum**, another opacifying agent. Preliminary experience in dogs is encouraging, but too few humans have been treated with this method to recommend it as more than an experimental procedure at this time.
CT Medical Descriptors:
*artificial embolism
dog
methodology
therapy
animal experiment
peripheral vascular system
Drug Descriptors:
***cyanoacrylate**
*iofendylate
RN (**cyanoacrylate**) 15802-18-3; (iofendylate) 99-79-6

L15 ANSWER 21 OF 24 MEDLINE DUPLICATE 11
AN 79247739 MEDLINE
DN 79247739 PubMed ID: 472240
TI Catheter and material selection for transarterial embolization: technical considerations. II. Materials.
AU Berenstein A; Kricheff I I
SO RADIOLOGY, (1979 Sep) 132 (3) 631-9.
Journal code: 0401260. ISSN: 0033-8419.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 197910
ED Entered STN: 19900315
Last Updated on STN: 19970203
Entered Medline: 19791017
AB In this second part of the report, the authors discuss the advantages and disadvantages of several embolization agents. These include Gelfoam, silicone spheres, polyvinyl alcohol foam (PVA), isobutyl-2-**cyanoacrylate** (IBCA), silicone fluid mixtures, and **tantalum** powder. The techniques employed and conditions under which these materials should be used are discussed.
CT Check Tags: Animal; Comparative Study; Female; Human; Male
Adult
Aged
Angiography
**Arteriovenous Malformations: RA, radiography**
**Arteriovenous Malformations: TH, therapy**

Bucrylate
Carcinoma, Squamous Cell: BS, blood supply
Carcinoma, Squamous Cell: RA, radiography
Carcinoma, Squamous Cell: TH, therapy
Catheterization: IS, instrumentation
Child, Preschool
Embolization, Therapeutic: IS, instrumentation
*Embolization, Therapeutic: MT, methods
Facial Neoplasms: RA, radiography
Facial Neoplasms: TH, therapy
Gelatin Sponge, Absorbable
Meningioma: BS, blood supply
Meningioma: RA, radiography
Meningioma: TH, therapy
Microspheres
Middle Age
Polyvinyl Alcohol
Silicones
**Tantalum**

RN 1069-55-2 (Bucrylate); **7440-25-7 (Tantalum)**; 9002-89-5 (Polyvinyl Alcohol)

L15 ANSWER 22 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 79150782 EMBASE
DN 1979150782
TI **Cyanoacrylate occlusion** of carotid-cavernous fistula with preservation of carotid artery flow.
AU Kerber C.W.; Bank W.O.; Cromwell L.D.
CS Dept. Radiol., Univ. Pittsburgh Sch. Med., Pittsburgh, Pa. 15261, United States
SO Neurosurgery, (1979) 4/3 (210-215).
CODEN: NRSRDY
CY United States
DT Journal
FS 037 Drug Literature Index
008 Neurology and Neurosurgery
018 Cardiovascular Diseases and Cardiovascular Surgery
LA English
TI **Cyanoacrylate occlusion** of carotid-cavernous fistula with preservation of carotid artery flow.
AB We report a new treatment for carotid-cavernous fistula. Using a flow-guided, balloon-tipped microcatheter we catheterize the fistula itself, verify balloon entry into the fistula with fluoroscopy and x-ray films, and then infuse the tissue adhesive isobutyl-2-**cyanoacrylate** with careful fluoroscopic control. Three patients have had their fistulas **occluded**, with preservation of flow through the internal carotid artery. This balloon microcatheter allows the radiologist to perform a reversible test **occlusion**. All three patients had neurological changes during or after the procedure, and in one we inadvertently **occluded** several distal middle cerebral artery branches without permanent neurological deficit. No patient became blind or developed 3rd, 4th, or 6th nerve palsy from the treatment. This technique seems to have promise as another method for the obliteration of carotid-cavernous fistula.
CT Medical Descriptors:
*artificial embolism
*carotid cavernous fistula
*carotid artery
*carotid artery fistula

*carotid artery flow
*cavernous sinus carotid artery fistula
balloon catheter
drug therapy
peripheral vascular system
major clinical study
therapy
Drug Descriptors:
*bucrilate
***cyanoacrylate**
***tantalum**
diazepam
RN (bucrilate) 1069-55-2; (**cyanoacrylate**) 15802-18-3; (**tantalum**) 7440-25-7; (diazepam) 439-14-5

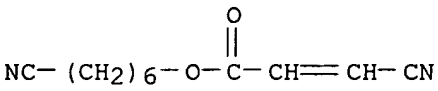
L15 ANSWER 23 OF 24 MEDLINE
AN 79125916 MEDLINE
DN 79125916 PubMed ID: 570455
TI Transcatheter embolization of the kidney with butyl-2-**cyanoacrylate**: experimental and clinical results.
AU Gunther R; Schubert U; Bohl J; Georgi M; Marberger M
SO CARDIOVASCULAR RADIOLOGY, (1978 Apr 25) 1 (2) 101-8.
Journal code: 7807044. ISSN: 0342-7196.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197905
ED Entered STN: 19900315
Last Updated on STN: 19970203
Entered Medline: 19790524
TI Transcatheter embolization of the kidney with butyl-2-**cyanoacrylate**: experimental and clinical results.
AB The technique and efficacy of therapeutic catheter embolization of the kidney with butyl-2-**cyanoacrylate** (Histoacryl) were studied in 80 rabbits (including control groups) and in 10 dogs. A mixture of butyl-2-**cyanoacrylate**, 50% glucose, and **tantalum** powder was used for the embolization. Complete and permanent vascular **occlusion** was found in nearly all cases. The main complication observed was a reflux of embolizing material into the lumbar arteries, which occurred in seven rabbits. Clinically therapeutic embolization was performed in six patients with hypernephroma. The indication for embolization in these patients, as well as in two others with iatrogenic lesions, was pronounced hematuria. Cessation of bleeding was achieved in all cases. For embolization the coaxial catheter technique is recommended; in special cases with extensive arteriovenous shunts, adjunctive balloon **occlusion** would be advisable.
CT Check Tags: Animal; Human
Adenocarcinoma: CO, complications
Catheterization: MT, methods
***Cyanoacrylates: TU, therapeutic use**
Dogs
Embolization, Therapeutic: AE, adverse effects
*Embolization, Therapeutic: MT, methods
*Enbucrilate: TU, therapeutic use
Hematuria: ET, etiology
*Hematuria: TH, therapy
Kidney Neoplasms: CO, complications
Lumbosacral Region: BS, blood supply

Rabbits
*Renal Artery
Renal Artery: RA, radiography
**Tantalum: TU, therapeutic use**
RN 6606-65-1 (Enbucrilate); **7440-25-7 (Tantalum)**
CN 0 (**Cyanoacrylates**)

L15 ANSWER 24 OF 24 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.
AN 78231800 EMBASE
DN 1978231800
TI [The technique of therapeutic catheter embolization of the kidney with Histoacryl (Butyl 2 **cyanoacrylate**)].
TECHNIK DER THERAPEUTISCHEN KATHETEREMBOLISIERUNG DER NIERE MIT HISTOACRYL (BUTYL 2 CYANOACRYLAT).
AU Guenther R.; Schubert U.; Georgi M.; Marberger M.
CS Inst. Klin. Strahlenkunde, Univ. Mainz, Germany
SO Aktuelle Urologie, (1977) 8/6 (229-303).
CODEN: AKURAJ
CY Germany
DT Journal
FS 037 Drug Literature Index
028 Urology and Nephrology
014 Radiology
016 Cancer
LA German
SL English
TI [The technique of therapeutic catheter embolization of the kidney with Histoacryl (Butyl 2 **cyanoacrylate**)].
TECHNIK DER THERAPEUTISCHEN KATHETEREMBOLISIERUNG DER NIERE MIT HISTOACRYL (BUTYL 2 CYANOACRYLAT).
AB On account of experimental research of 50 rabbits and 10 dogs and based on empirical data of 7 patients the authors are able to give exact details of a practical and successful application of Histoacryl (butyl-2-cyanoacrylat) for therapeutic catheter embolization of the kidney. Histoacryl has to be diluted with glucose solution in an adequate ratio of components and made radiopaque by added **tantalum** powder. For the embolization it is advisable to use the coaxial catheter technique and the adjuvant balloon **occlusion** for special cases.
CT Medical Descriptors:
*artificial embolism
*catheter
*dog
*kidney cancer
*rabbit
methodology
theoretical study
Drug Descriptors:
***cyanoacrylate derivative**
enbucrilate

[redacted] [redacted]

RN 178328-40-0 REGISTRY
CN **2-Propenoic acid, 3-cyano-, 6-cyanohexyl ester (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN **6-Cyanohexyl cyanoacrylate**
FS 3D CONCORD
MF C11 H14 N2 O2
SR CA
LC STN Files: CA, CAPLUS



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**